

Here is the extracted list of achievements from the document, rephrased into professional, high-impact, action-oriented bullet points tailored for your resume:

## 1. Capacity Enhancement & Production Scaling

## 2. Solvent Recovery & Cost Savings

- **SRS Efficiency Improvement:** Heightened overall solvent recovery from 62% to 80.2% via targeted operational changes, generating an annual savings of ₹5.64 Crores.
- **MDC Mitigation:** Reduced M.D.C loss from 45% to 21% by deploying specialized vent condensers in critical process areas.
- **Cooling Tower Infrastructure:** Supervised the installation of a 1000 TR cooling tower for the Solvent Recovery System (SRS) to replace an older 500 TR unit, cutting solvent losses from 8% down to 3%.
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## 3. Process Efficiency, Quality & Cycle Time Reduction

- **Distillation Cycle Reduction:** Reduced toluene distillation time by 68% (from 25 hours down to 8 hours for a 12 KL batch) by implementing a Double Falling Film Evaporator.
- **Impurity Profiling & Quality:** Decreased Clopidogrel Bisulfate failure rates across multiple parameters by minimizing SMUI (CHox) impurities using a specialized BHA, alumina bed, and carbon module setup.

## 4. Project Engineering, Commissioning & Safety Excellence

- **Sustainability & Energy Projects:** Managed the Mahad site water recycling and steam condensate project, successfully increasing the boiler Steam-to-Fuel Ratio (SFR) from 2 to 3.5 while lowering coal consumption.
- **Utility Cost Conservation:** Optimized energy use during Thionyl Chloride addition by re-configuring utility steps to run a single compressor instead of two, creating significant power savings.

Here is the extracted list of achievements from the document, rephrased into professional, high-impact, action-oriented bullet points tailored for your resume:

## 1. Capacity Enhancement & Production Scaling

- **Productivity Expansion:** Boosted average plant productivity from 480 MT to 600 MT through targeted debottlenecking and Value Stream Mapping (VSM), securing an annual savings of ₹4.65 Crores with zero capital expenditure.
- **Pioglitazone Scaling:** Expanded manufacturing capacity for Pioglitazone three-fold utilizing the existing facility footprint.
- **Phenylephrine HCl Growth:** Heightened the production capacity of Phenylephrine HCl from 1.5 MT to 4 MT through advanced equipment utilization and strategic production planning.
- **Large-Scale Production:** Successfully managed block operations to deliver 100 tons of coupled ester in a single block by accelerating distillation, filtration, and drying cycles.
- **Yield Optimization:** Enhanced active process production output from 140 MT to 195 MT, resulting in a recurring cost savings of ₹35 Lakhs per month.
- **Quetiapine Fumarate Scaling:** Drove continuous improvement modifications to increase Quetiapine Fumarate capacity from 10 tonnes to 15 tonnes.
- **Clopidogrel Throughput:** Spearheaded capacity enhancement for Clopidogrel Bisulfate from 3.0 TPM to 4.4 TPM.
- **Alfuzosin Amine Scaling:** Multiplied Alfuzosin Amine batch capacity from 25 kg to 125 kg, scaling total API throughput from 0.35 TPM to 2.0 TPM.
- **Atazanavir Sulfate Scaling:** Scaled Atazanavir Sulfate batch sizes from 45 kg to 270 kg, increasing total API capacity from 0.85 TPM to 4.7 TPM.
- **Metformin Input Expansion:** Increased Metformin batch charging parameters from 800 kg to 1200 kg based on raw material input optimization.
- **Evaporator Design:** Designed an evaporator unit with an 800 LPH capacity to enhance the total throughput of Gabapentin.
- **Multi-Product Scaling:** Generated cost-effective solutions to expand capacities for Amoxicillin TH (72 MTPM to 108 MTPM), Sulbactam Sodium (2.2 MTPM to 3.3 MTPM), and PVMC (9.1 TPA to 16.7 TPA).

## 2. Solvent Recovery & Cost Savings

- **SRS Efficiency Improvement:** Heightened overall solvent recovery from 62% to 80.2% via targeted operational changes, generating an annual savings of ₹5.64 Crores.
- **MDC Mitigation:** Reduced M.D.C loss from 45% to 21% by deploying specialized vent condensers in critical process areas.
- **Cooling Tower Infrastructure:** Supervised the installation of a 1000 TR cooling tower for the Solvent Recovery System (SRS) to replace an older 500 TR unit, cutting solvent losses from 8% down to 3%.
- **R&D Recovery Implementation:** Executed R&D experiments to design solvent recovery processes for two major products, securing client approval and delivering annual savings of ₹2.1 Crores.
- **Toluene Elimination:** Completely eliminated toluene usage from the menthol extraction process while simultaneously increasing overall menthol recovery metrics.
- **Fluoxetine HCl Optimization:** Increased toluene recovery in Fluoxetine HCl from 2,600 Lts to 2,900 Lts while cutting the distillation cycle time from 13 hours to 9 hours by integrating a vacuum balancing line.
- **Controlled Vacuum Systems:** Raised MDC recovery in Clopidogrel Bisulfate from 600 Lts to 1,050 Lts by establishing controlled vacuum and nitrogen configurations.
- **Solvent Stream Enhancements:** Increased acetone recovery from 60% to 88% for Cefuroxime Axetil Amorphous, improved MDC recovery from Cefprozil-I, and elevated DMF recovery from 12 KL to 17.5 KL per day.

## 3. Process Efficiency, Quality & Cycle Time Reduction

- **Unit Operation Integration:** Consolidated crude filtration, slurry preparation, filtration, and drying into a single Agitated Nutsche Filter Dryer (ANFD) unit, entirely eliminating centrifuge steps and reducing labor costs and cycle times.
- **Distillation Cycle Reduction:** Reduced toluene distillation time by 68% (from 25 hours down to 8 hours for a 12 KL batch) by implementing a Double Falling Film Evaporator.
- **Drying Cycle Acceleration:** Cut drying cycle times from 32 hours to 16 hours for Quetiapine Fumarate by replacing a Nutsche filter with an ANFD system for Cat-B recovery.
- **Maintenance Downtime Reduction:** Reduced equipment maintenance downtime by 50% (from 24 hours to 12 hours) in Finasteride processing through the installation of a low-temperature sonicator.
- **Analytical Cycle Optimization:** Reduced batch drying cycle times by 5 hours and increased capacity by replacing conventional dry oven analysis with an automated Halogen Moisture Analyzer for LOD testing.

- **Closed-Loop Washing:** Reduced fresh solvent consumption by developing and implementing closed-loop automated wash workflows to replace manual washing.
- **QC Sample Optimization:** Proposed and implemented reduced in-process sample testing protocols, successfully lowering the analytical workload on the Quality Control (QC) department.
- **Impurity Profiling & Quality:** Decreased Clopidogrel Bisulfate failure rates across multiple parameters by minimizing SMUI (CHox) impurities using a specialized BHA, alumina bed, and carbon module setup.
- **Failure Rate Reduction:** Introduced a specialized step-drying process to successfully minimize the RS-OVI failure rate for Clopidogrel.

## 4. Project Engineering, Commissioning & Safety Excellence

- **DCS Automation Projects:** Successfully commissioned a new production block equipped with an Emerson Delta V 7.0 Distributed Control System (DCS), custom safety interlocks, alarm logics, and automated E-BPR generation.
- **ATFD Installation:** Erected and operated a 5m<sup>2</sup> Agitated Thin Film Dryer (ATFD) operating under steam-under-vacuum conditions.
- **Sustainability & Energy Projects:** Managed the Mahad site water recycling and steam condensate project, successfully increasing the boiler Steam-to-Fuel Ratio (SFR) from 2 to 3.5 while lowering coal consumption.
- **Utility Cost Conservation:** Optimized energy use during Thionyl Chloride addition by re-configuring utility steps to run a single compressor instead of two, creating significant power savings.
- **Boiler & Turbine Commissioning:** Handled the erection and commissioning of a 14 TPH boiler alongside a 0.9 MW power plant turbine.
- **Large-Scale Block Erection:** Supervised capital projects totaling ₹150 Crores, including the erection and commissioning of a 23-reactor production block, a specialized MSA plant, and a 600 TR cooling tower with calculated utility header lines.
- **Effluent Treatment Engineering:** Resolved critical site effluent challenges by building and commissioning a 300 KL/Day Multiple Effective Evaporator (MEE) integrated with an ATFD system.
- **Validation Scale-Up:** Completed commercial trials and validations for critical products including BCFI, Telmisartan, Phenylephrine HCl, and a 100 kg batch size scale-up of Deferasirox.
- **Zero-Incident Hazardous Chemistry:** Handled highly critical and hazardous chemical reactions (including Grignard, Cyanation, and Azide chemistry) and high-potency Oncology molecules via closed containment systems with a record of zero safety incidents.

